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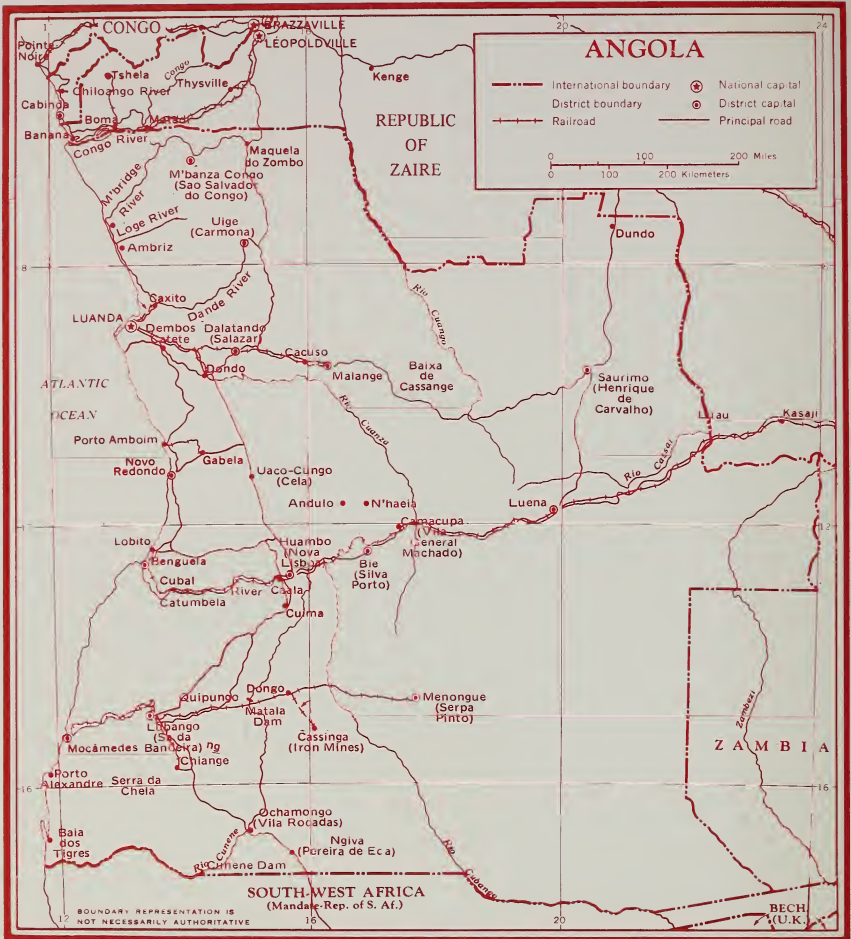
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ANGOLA'S AGRICULTURAL ECONOMY IN BRIEF

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NOTE: Names in parentheses are pre-independence names.

ANGOLA'S AGRICULTURAL ECONOMY IN BRIEF. By Herbert H. Steiner, Foreign Demand and Competition Division, Economic Research Service. Foreign Agricultural Economic Report No. 139.

ABSTRACT

A short summary of the history, and a description of the physiography, climate, soils and vegetation, people, and economy of Angola are followed by a report on the agricultural sector as it existed just before independence in November 1975. Coffee was then the principal crop; corn and cassava were the staple foods. Other important crops were cotton, sisal, bananas, beans, and potatoes. Petroleum was the principal export, followed by coffee, diamonds, iron ore, fishmeal, cotton, and sisal.

Keywords: Angola; Africa; Agricultural production; Agricultural trade.

PREFACE

Angola became independent on November 11, 1975. A devastating civil war accompanied the transition. The war and the exodus of most of the employees of the colonial Government interrupted the collection of statistics on production and trade. Because of the paucity of reliable data during and after the transition, this study is essentially a description of Angolan agriculture as it existed before independence. Rapid changes are taking place. The new Government has nationalized the commercial farms and plans to organize the small farmers into cooperatives. But the crops remain essentially the same, and they are produced in the same regions. In the future, as reliable statistics again become available, this study can serve as a benchmark for comparing the new agriculture as it develops with that which existed under the colonial regime.

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SUMMARY

Although Portuguese presence in Angola dates back to 1483, Portugal did not achieve control of all of Angola until 1915, and Portuguese immigration into Angola became important only in the forties and after. In the early seventies, it accounted for 5 percent of a total population of 6 million.

Agriculture provides the livelihood for the majority of the people of Angola, and in 1973 it accounted for just under 40 percent of the nation's exports--mainly coffee. There were a little more than 1 million small traditional farms in the early seventies; these averaged 4 hectares in size, and about a third were in the central plateau region. The agricultural census of 1971/72 listed 8,032 commercial farms. These farms, held under Portuguese law, ranged from large plantations down to small family farms. Most of the commercial farms were in four regions: (1) Carmona coffee zone, (2) Gabela coffee zone, (3) central plateau around Huambo-Bie, and (4) the southeast plateau near Lubango.

Angola produces a large variety of crops. Robusta coffee is the most important cash crop. In 1971/72, about two-thirds of this crop was produced on commercial plantations; the rest was produced on small African farms. There were two coffee zones: (1) the Dembos-Uige zone near Carmona and (2) the Calulo-Gabela zone east of Porto Amboim.

Production of the principal food crops--corn, cassava, beans, and potatoes--was concentrated on the central plateau. Cotton was produced on both commercial and traditional farms. Sisal was entirely a plantation product from the Cubal region southeast of Benguela. During the civil war in 1975-76, and in the period immediately following, agricultural production in Angola dropped sharply. This happened because most of the commercial farms were abandoned by their Portuguese owners and the disrupted transportation and market systems discouraged production in the traditional sector.

Angola's principal agricultural exports in 1974 were coffee, cotton, sisal, bananas, and corn. Agricultural imports included wine, wheat and flour, dairy products, olive oil, malt, margarine, and jute.

The United States imported coffee valued at \$66 million from Angola in 1976, and exported \$8 million worth of wheat to Angola. U.S. trade with Angola totaled \$299 million.

CONVERSION FACTORS

1 hectare	=	2.47 acres
1 kilogram	=	2.2 pounds
1 metric ton	=	2,204.6 pounds
1 meter	=	39.37 inches
1 millimeter	=	0.3937 inches
1 kilometer	=	3,281 feet = 0.621 mile

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INTRODUCTION

In the fifteenth century, two African kingdoms were located in what is now northern Angola. The Kingdom of the Bakongo controlled the area around the mouth of the Congo River and to the south was the Kingdom of the Kimbundu. Portuguese navigators exploring the coast of Africa first visited the court of the Manicongo, King of the Bakongo, in 1483, and later contacted the Ngola, King of the Kimbundu. The name Angola was derived from Ngola, the title of this king.

At first, Portuguese relations with the Bakongo Kingdom were friendly. In a letter to Lisbon the Manicongo addressed the King of Portugal as "our brother king." Africans from the Bakongo Kingdom were guests at the court in Lisbon, and the King of Portugal in turn sent skilled workers and missionaries to the court of the Manicongo. But in the sixteenth century, the demand for slaves to work the new sugar plantations on the islands of Cape Verde and Sao Tome and in Brazil overshadowed other considerations. Supplying slaves became Angola's most lucrative activity. As a result, the slave trade dominated that country's economy for 350 years. The Portuguese established themselves at Luanda, Benguela, and Mocamedes on the coast, but the interior remained under the control of a number of African kingdoms. The kings traded slaves for firearms, textiles, metal products, and wine--reaping both economic and political benefits from the transaction. They sold captives of war and often their own people into slavery, especially if they were political opponents (10). 1/

1/ Underscored numbers in parentheses refer to items in the list of references at the end of this report.

Agricultural production remained at the minimum subsistence level, and at times food for Luanda and other towns along the coast came from Portugal or Brazil in returning slave ships. Such crops as cassava, corn, peanuts, potatoes, sweetpotatoes, tobacco, and cashew nuts were introduced into Angola from the Americas to add to the African food crops, sorghum, millet, rice, and yams. After the end of the slave trade in the 1850's, ivory became the important export, followed by raw rubber, beeswax, and palm oil. Trade in rubber disappeared after 1912 because of competition from Asia. Although coffee production began in the 1830's, it only became important a century later. Favorable coffee prices in the 1940's led to large increases in production. Capital generated by this coffee boom provided a major impetus for economic development (especially of small industry) during the next decade.

The Berlin Conference of 1884-85 established Portugal's claims to Angola, and subsequent treaties with France, Germany, Britain, and Belgium delineated Angola's borders. However, Portuguese military conquest and occupation of the entire country was not complete until 1915. From 1930 on, Portuguese policy was aimed at integrating Angola economically, socially, and politically as a part of the Portuguese nation. A major attempt was made to assimilate the Africans; those who could speak Portuguese could apply for Portuguese citizenship. At the same time, immigration of white settlers from Portugal was encouraged. But the assimilation policy produced a group of educated Africans with aspirations for independence, and the immigration of whites created resentment, because the whites competed with Africans for jobs. In 1961, an insurrection was firmly put down and extensive reforms followed. Forced labor and the compulsory growing of cotton by Africans were abolished and, at the same time, more money was invested in industry, infrastructure, and education.

But the rebels wanted nothing short of independence. There followed years of harassment and guerrilla warfare against a large, fully equipped Portuguese military force. The long stalemate was

finally broken in 1974 when the new Portuguese Government promised independence. An agreement was signed in January 1975 between the Government of Portugal and three different freedom groups, creating a transitional government for Angola. Cooperation among the three broke down, and the struggle expanded into a civil war. Independence day, November 11, 1975, found the Marxist-oriented Movimento para a Liberacao de Angola (MPLA) in control of Luanda and the surrounding region, while the more conservative Frente Nacional para a Liberacao de Angola (FNLA) held most of the north; the third group, the moderate-socialist Uniao Nacional para Independencia Total de Angola (UNITA) was based in the southeast. The MPLA gained nominal control of Angola early in 1976.

THE LAND

Angola is situated on the southwest coast of Africa between 4°22" and 18°02" south latitude. Its total area equals 1,246,700 square kilometers, almost twice the size of Texas. The main part, south of the Congo River, is bounded on the north by Zaire (formerly the Belgian Congo), on the east by Zaire and Zambia, and on the south by Namibia (South West Africa). An exclave of 7,270 square kilometers called Cabinda lies north of the Congo River. Cabinda is separated from the north bank of the Congo River by a corridor of land about 40 kilometers wide belonging to Zaire. Cabinda is bounded on the north by the People's Republic of the Congo (Congo-Brazzaville) and on the east and south by Zaire.

Most of Angola is a plateau that reaches its highest point at its central western edge where Moco, one of a few scattered mountains rising from the plateau, measures 2,620 meters. Elevations on the plateau proper range from 1,800 meters near Huambo (formerly Nova Lisboa) down to 745 meters at the northern border with Zaire, and from 900 to 1,200 meters along the eastern and southern borders. A depression called the Baixa de Cassange along the Cuango River in the north lies about 200 meters below the adjacent parts of the plateau. To the west, the plateau

drops off sharply to a coastal plain, most of which lies at an elevation of less than 200 meters. This descent is especially sharp in the south, where an escarpment, more than 1,000 meters high, separates the coastal plain from the Serra da Chela above. Further north in the area of Porto Amboim and Novo Redondo, the transition from plateau to coastal plain is in a series of terraces. North of the Cuanza Valley, parallel mountain ranges 1,000 to 1,400 meters high lie east of the coastal plain. The plain becomes narrower as one goes south, but the greatest width, 200 kilometers, is in the Luanda area. South of Mocamedes, it widens into a sandy desert with shifting dunes. The northward flow of the Benguela Current has built sandspits along the Atlantic coast, creating natural harbors at Luanda, Lobito, Porto Alexandre, and Baia dos Tigres. A large part of Cabinda lies at less than 200 meters altitude; heights along the eastern border of Cabinda reach 800 meters.

Angola is a land of many rivers, which flow in all directions from the watershed on the central plateau. The rivers of Western Angola, flowing into the Atlantic Ocean, provide a permanent water supply for irrigation and industry on the coastal plain. The Cuanza River, which flows into the Atlantic south of Luanda, drains much of central Angola and is navigable by small steamer 225 kilometers upstream. The first stage of the Cambambe Dam, completed on the Cuanza in 1963, provides power for the Luanda area; two large irrigation projects on this river are expected to water 300,000 hectares.

The Cunene, another large river, begins on the central plateau and flows south through the Huila area, and then turns westward to form 322 kilometers of the border with Namibia. The Matala Dam and its associated irrigation project, and another irrigation project further south at Vila Rocadas, are both on the Cunene. North of the Cuanza, smaller permanent rivers such as the M'Bridge, Loge, Dande, and Longa all flow into the Atlantic through poorly drained swampy areas along their lower courses.

In the eastern half of Angola, the rivers flow either northward into the Congo basin or southwestward into the Zambezi and on to the Indian Ocean. Most of these river flows are seasonal and are not reliable sources of irrigation water. The Cubango River forms 322 kilometers of the southern border of Angola before emptying into the Okavongo Swamp in Botswana. In northeastern Angola, a number of major rivers--the Chiumbe, Chicapa, Cuilo, Cuango, and Cassai--flow northward to the Congo.

Land Utilization

Out of a total area of 124 million hectares in Angola, 8 million hectares are classified arable. This includes land in fallow rotation. During the 1971/72 crop year, 4,263,000 hectares were planted to crops, including permanent crops such as coffee and fruit trees.

The rest of the land was divided into the following classifications:

Forests	55	million	hectares
Grazing land	27	"	"
Desert	25	"	"
Steppes and savannas (not used for grazing)	9	"	"

Climate

Angola's climate ranges from tropical rain forest in the north to desert in the extreme south. The November through April wet season is followed by an almost rainless dry season from May through October. The wet season is longer in the north. The first rains begin in the northeast in September and gradually extend south, reaching the area south of Menongue (formerly Serpa Pinto) in December. The rains, which vary greatly from year to year, often come as sudden heavy thundershowers--washing out crops, roads, bridges, and railroads. Most frequent and largest total rainfall occurs in northeast Angola in the

districts of Uige, eastern Malange, and Lunda, and in the central highlands around Huambo. In these regions, average annual precipitation ranges from 1,300 to more than 1,600 millimeters (51 to over 63 inches). Going south, precipitation decreases; along most of the southern border it is only about 600 millimeters (24 inches).

The Atlantic Coast has less rainfall than points in the interior at the same latitude. The arid climate (400 millimeters and less of precipitation) of the coastal strip from Luanda south is caused by a temperature inversion of the air above the cold Benguela Current, which flows from the Antarctic. The cold water lowers the temperature of the air immediately above it, while the layers of air higher up remain warmer. This lowers the moisture-carrying capacity of the air, producing much fog but little rain. The coastal arid strip is widest south of Mocamedes, where the influence of the Benguela Current is stronger. In July-August in this area, the so-called Berg winds--hot, dry winds from the interior of Angola--often descend the escarpment. This is air which has lost its moisture over the mountains of southern Africa in flowing northwestward from the subtropical low. Annual rainfall at Mocamedes is only 50 millimeters (about 2 inches), at Lobito, 266 millimeters (10.5 inches), at Luanda, 330 millimeters (13 inches). Far to the north on the coast of Cabinda, rainfall averages 670 millimeters (26.4 inches).

During the dry period from June through August, also the coldest time of the year, the Benguela Current shifts north, where its influence causes fog (the cacimbo) along the western slopes of the mountain ridges that run parallel to the coast. During the dry season, this fog impedes the drying out of the soil and provides humidity for the coffee plants. At the latitude of Ambriz, the fog reaches far inland, repeating itself on each of the parallel mountain ridges. South of the latitude of Novo Redondo, the fog affects only a narrow strip about 20 kilometers wide along the coast.

Though Angola lies entirely within the tropics, temperatures range from a maximum of over 38°C (degrees Celsius or 100°F) in the northern interior to a minimum of 5°C below freezing (23°F) at the higher elevations in the south. On the interior plateau, the mean daily temperatures vary from 30° C (85°F) in December-February down to 10°C (50°F) in June-August. On the coast, mean annual temperatures range from 16° C (60°F) in the south to 23°C (73°F) in the north, and both the daily range and the difference between the hottest months and the coldest months is only about 6°C.

Soils and Vegetation

The most agriculturally significant soils are red, and reddish-brown to yellowish-brown, latosols 2 to 3 meters deep. These well-drained acid soils cover most of the western part of Angola, except for the coastal region, and extend from the northeastern part of Cabinda down to Lubango, Cassinga, and Menongue. They are low in plant nutrients, but have physical properties favorable for tillage, and respond well to fertilizer, though their high content of iron and aluminum oxides tends to fix the phosphates. The latosols are the predominant soils in the coffee regions.

The vegetation in the coffee regions originally consisted of dense forest with shrubs and wild coffee growing in the shade of the taller trees. The original lower layer of wild coffee and brush has been replaced by cultivated coffee trees.

On much of the central plateau the vegetative cover is grass with scattered small crooked trees. South of the Catumbela River and down along the Serra de Chela, the predominant vegetation consists of deciduous trees, less than 10 meters high, and scrub, which lose their leaves during the dry season. West of this forested region lies the coastal desert that gradually widens into the Namibian Desert, south of the Cunene River.

Mangrove swamps line the Chiloango River in Cabinda, the lower Congo shore, and some of the rivers along the north coast. The eastern half of Cabinda has clay-like, lateritic soil covered by broadleaf evergreen rain forest. The western half is savanna on sandy soil. This sandy strip continues down the entire coast, gradually phasing into desert south of Luanda.

THE PEOPLE

The population of Angola was estimated at 6 million in 1975; the majority are black Africans, belonging to many Bantu-speaking tribes. Population density was about 12 persons per square mile, compared with 23 per square mile for Africa as a whole. Population was concentrated on the west central plateau and in the coastal port cities. The eastern half of Angola had only about two persons per square mile, except for the diamond-mining district south of Dundo in the northeast. Most people planted food crops to supply their subsistence needs; others sold coffee, cotton, corn, and other crops on the market. Many worked on coffee plantations. Increasing numbers were migrating to the cities to work in commerce, industry, or services.

The white and mestizo population was estimated at 250,000 to 300,000 in 1975. Over 60 percent lived in the cities, where they held most of the skilled positions, but a number of whites also competed with blacks for unskilled jobs. Despite Portuguese attempts to further rural settlement by whites, only a small percentage were farmers.

In 1975, during the power struggle and civil war that accompanied the change from Portuguese colony to independent nation, most of the whites left Angola.

Three black ethnic groups made up 75 percent of the population. These were (in order of importance) the Ovimbundu (or Umbundu) in the central highlands, the Kimbundu in the central northeast, and the Kicongo (or Bacongo) in the northwest and Cabinda. The rest of the population consisted of about eight smaller tribal groups.

THE ECONOMY

As a colony, Angola supplied raw materials and foreign exchange to Portugal and provided a monopoly market for Portugal's products, notably wine, olive oil, and textiles. The positive trade balance with such countries as the United States, Japan, and the Netherlands was not enough to cover a chronic negative balance of trade with Portugal. This was further aggravated by transfer of profits and earnings by local Portuguese to Portugal. For many years, the majority of the people were engaged in subsistence agriculture, outside the money economy, while the small commercial sector depended on the production and export of diamonds, forest products, fish, and a number of agricultural commodities. The most important of these were coffee, cotton, and sisal. Production of petroleum and iron ore began in the mid-fifties and gradually increased in importance so that by 1975, exports of petroleum surpassed coffee in value, and iron ore ranked right after coffee as the third export. Fish and fishmeal also ranked as important exports.

In the sixties, Portugal loosened restrictions against industrial development. Industry consisted of the processing of food crops, fish, sisal, cotton, and tobacco for the domestic market; production of small-scale consumer goods and metal products; and a cement industry. Industrialization accelerated in the early seventies as a result of restrictions on imports. With both energy resources, such as petroleum and water power, and a variety of minerals, Angola has potential for further industrial development. Angola has three excellent ports--Luanda, Lobito, and Mocamedes--which are each served by a rail line into the interior. Luanda, which handles a wide variety of commodities, including coffee, cotton, and sisal, has been the most important. Lobito is the terminus of the Benguela Railroad, which hauls corn, manioc, and sisal from the plateau region, and copper from Shaba (Katanga region of Zaire). The Mocamedes Railway extends only as far as Menongue (former Serpa Pinto), but could be extended to Zambia. It ships out the iron ore from the Cassinga mines.

Per capita Gross National Product was estimated at about \$270 in 1973; this was only an average of two widely separated classes. Per capita income of the smaller upper class was about \$1,000 per year; for the remainder of the population it was less than \$100 annually.

In 1977, the policy of the Government of the People's Republic of Angola favored a planned economy, with Government ownership of the large- and medium-size industries. The agricultural sector was to be organized into state farms and cooperatives. However, a small private sector was allowed to coexist.

AGRICULTURAL PRODUCTION AND MARKETING

Types of Farms

In the early seventies, many different agricultural production units existed side by side in Angola--ranging from primitive hunting and gathering to large commercial plantations. The agricultural census classified all these different production units into two groups: one called traditional, the other commercial (2).

Traditional

The traditional production unit reflects the way generations of Africans had cultivated crops on land loosely held by the tribal clan. Small plots of land were cleared, cropped for a few years, and then allowed to revert to brush and trees, while new plots were cleared and planted nearby. As long as the population was small relative to the amount of land, this continuous shifting to unused land was actually a rotation with a fallow period of from 35 to 50 years. As the population increased, and as more and more land concessions were granted to Europeans, the fallow period became shorter and shorter. Production on the traditional, small-scale unit was for both the cash market and home consumption. On the central plateau, for

example, a majority of the small traditional farms produced corn for the cash market.

Different crops were often interplanted in the same field. The agricultural census of 1971 showed that a large percentage of crops such as corn, cassava, beans, peanuts, sorghum, millet, coffee, and potatoes was planted in the same field with one or more other crops. The mixed cropping was less prevalent with other products, but even half the wheat and a fifth of the rice and cotton were planted in this way.

Seventy-nine percent of the traditional holdings were divided into two, three, or more separate parcels. Sometimes these parcels were one or more kilometers apart, in order to take advantage of local differences in temperatures, water, soils, and so on, for planting crops at different times. Because means of food storage were limited, the production had to be spread out in different locations to supply food for the whole year. This was done rationally, based on long experience. Some plots were in fallow, others in pasture. Land often appeared abandoned when actually it was in fallow.

In 1971/72, there were 1,198,734 such traditional holdings totaling 4,710,000 hectares (roughly 4 hectares per holding). Only 3,427,000 hectares of these holdings were actually planted in crops. In many of the more productive areas, there was not enough land for the number of people attempting to live by African long-rotation cultivation methods. This was the case on the central plateau, where 359,000 traditional holdings covered about 2 million hectares. According to a land tenure survey made in Huambo Conselho in 1972 (9), 17,143 African families occupied only 4.6 hectares per family, while the minimum amount of cropland considered necessary to sustain a family in the area, with existing technology, was 11 hectares. To reduce population pressure on the land to the point considered adequate by those making the survey would have required the emigration of 10,000 families (50,000 people) out of Huambo Conselho.

Commercial

For 1971/72, the agricultural census listed 8,038 commercial farms occupying an estimated 3,300,000 hectares. Only 837,000 hectares were in crops (2).

The commercial farms included the entire gamut of farms held under Portuguese law; these generally had large regular fields and substantial buildings. Some were large plantations, such as the 17,500-hectare Boa Entrada coffee plantation. Others were concessions granted to individuals for a fixed rent (foro) per hectare. If specified conditions of land use and improvement were fulfilled, the concessionaire received formal title and full private property rights. For livestock development and forest exploitation, special leasehold concessions were granted for 20 years, subject to renewal.

Also included in the commercial category were small- and medium-sized farms, granted to settlers with the proviso that they develop the property and continue to live on it. Full title was granted after all the requirements were met, and after the property had been held for a specified number of years. These were usually in settlements called colonatos. During the sixties, the Government of Portugal spent large sums to finance settlers from Portugal on the colonatos, but most of these settlers left the colonatos to live in the cities (7).

The commercial farms were all registered under Portuguese civil law. Farms owned by Africans, if registered with a title under Portuguese law, were included in this category. The crops on commercial farms also were more likely to be planted in the European pattern in separate fields. Use of fertilizer, insecticides, and machinery in general distinguished commercial farms. Although both the traditional and the commercial farms produced for the market, the commercial farms were more market-oriented. But many of the smaller farms classified as commercial did not use fertilizer and machinery, and produced mainly for home consumption. Thus, the salient difference between the two was that the

commercial was held under private ownership, according to the rules of Portuguese law, while the traditional was property of the tribal group.

The commercial farms, abandoned during the white exodus in 1975, were nationalized. The larger plantations became state farms, while the new Government was planning to distribute the smaller properties to "those who work the land." These were to be organized into cooperatives.

Principal Crops

Because of its size and ecological diversity, Angola produces a large variety of crops. Production of the principal crops is discussed below. Production data for 1966-76 are summarized in table 1. Planting and harvesting seasons and principal production areas are listed in table 2.

Coffee

Coffee, from 500 million trees, is Angola's most important cash crop. According to the 1971/72 census, 540,000 hectares were planted in coffee, 67 percent of this as commercial plantations. The 2,515 commercial plantations (361,000 hectares) produced 142,000 tons of coffee in the 1971/72 season. The balance of production (64,000 tons) came from 286,000 traditional producers (178,000 hectares). Ninety-eight percent of the coffee was produced in northern Angola and Cabinda, but only two regions--the Dembos-Uige zone and the Calulo-Gabelo zone--accounted for 75 percent of production (2).

The Dembos-Uige zone, stretching from Dalatando to the north of Carmona, produced the dry-processed Ambriz coffee. During the 1971/72 crop year, 56,000 traditional farms averaging 1.6 hectares of coffee each, produced 31,000 tons of coffee. These were mainly mixed crop farms where coffee was the cash crop and other crops were primarily for home consumption. Production of a typical 2-hectare traditional farm in

Carmona in the early seventies shows that only 1 hectare was devoted to coffee. The other hectare was planted in food crops for the family.

The plantations produced more coffee than all these small holdings combined; 970 plantations, averaging 175 hectares of coffee each, produced 65,000 tons. These plantations depended on migrant workers from the heavily populated regions of the central plateau for their labor, because the majority of rural residents of the Dembos-Uige area worked on their own small plots. The following tabulation shows typical traditional holdings in Carmona:

Crop	: Hectares	: Annual production	: Days of labor per year
1,000 Robusta trees.....	: 1.0	: 300 kg. green coffee	: 80
Bananas.....	: 0.1	: 1,000 bunches	: 20
Corn.....	: 0.3	: 450 kg.	: 60
Cassava.....	: 0.1	: 300 kg. of flour	: 65
Beans.....	: 0.02	: 10 kg.	: 10
Fruit and poultry.....	: 0.18	: Not available	: 15
Peanuts.....	: 0.3	: 100 kg. shelled	: 58
Total.....	: 2.00	:	: 308

The Calulo-Gabela coffee zone east of Porto Amboim produced largely wet-processed coffee of higher quality than that produced in the Dembos-Uige zone. The largest plantations accounted for most of the Calulo-Gabela zone's production. One of these, the Fazenda Boa Entrada, which belonged to Companhia Angolana de Agricultura (CADA), the largest coffee producer in Angola, had 17,500 hectares planted in coffee trees and had in the past produced as much as 12,000 tons per year. A disease referred to as "sudden death" was a threat to coffee in the Amboim-Calulo-Gabela zone, where it killed some 10 million trees over a 4-year period. On the CADA plantations alone, some 2,500 hectares had to be replanted in 1967 because of damage

from this disease. The trees affected suddenly wilt and die; the cause is unknown.

The average longrun yield of Robusta coffee in Angola had been about 500 kilograms per hectare. Labor accounted for about 75 percent of variable costs on the coffee plantations which provided from 180,000 to 200,000 jobs. In addition to the principal task of harvesting the coffee beans, the work of caring for the coffee plantations includes: cutting or destroying the weeds and forest sprouts three or four times a year; fertilizing the seedlings; spraying them occasionally; and constructing the terraces they grow on. Pests and diseases other than "sudden death" were *Fusarium* Species, the coffee berry disease (*Collectribthum coffeanum*), the bean borer beetle (*Stephanoderes Hames*), the white stem borer (*Anthores Lenconotus*), and *Lygus* bugs.

Originally, Robusta was planted in the shade of natural forests on the mountain slopes, where many wild coffee species already existed. These forests were thinned out and cleared of all underbrush prior to planting the coffee seedlings. As the coffee area expanded, plantations were started in the savanna, where fast-growing shade trees were set out at the same time. While not the original habitat of coffee, these more level areas make mechanization easier, and thus are more suitable to large-scale operation. In the early seventies, potential for new coffee plantations existed mainly in the savanna regions. On many of these marginal lands in the savanna, the expected returns were not high enough to justify the \$1,000 to \$1,500 per hectare investment required to establish a coffee plantation. Some of the established plantations produced other commodities, such as citrus fruit, flowers, pineapples, pharmaceutical plants, beef cattle, and milk. The Boa Entrada Plantation also had 5,200 hectares of oil palms. Most of these supplementary products were sold on the domestic market.

Arabica accounted for only 2 percent of Angola's coffee production. The main type called Catura is produced at altitudes of from 1,000 to 1,500 meters. One Arabica area lies north of Huambo, near Andulo and

Nhareia, where Africans produce coffee on small plots. A few European-owned plantations in the Cuima Highlands in Benguela District, and others north of Huambo, produced a quality Arabica. These Arabica plantations yielded 1,500 kilograms per hectare and more. Many of them had equal areas of coffee and grass; the grass was cut periodically to provide mulch for the coffee trees.

The coffee-harvesting season is from June through September; the marketing year is from April 1 through March 31.

Cotton

The cultivation of cotton in Angola dates back more than 400 years. Except for a brief surge of production in the 1860's at the time of the Civil War in the United States, cotton production remained insignificant until the thirties. After 1926, a new law required farmers in parts of the Luanda, Cuanza Norte, and Malange districts to plant cotton. Ten private companies received monopoly rights, each in its area, to buy the cotton from the producers at a price fixed by the Government, and to gin it. The concession holders also distributed seed to the farmers at planting time, and received technical aid and a tax reduction in return for developing the production and marketing of the cotton. As a result of this program, cotton production increased to a peak of 22,000 tons in 1944, and then remained at this level for the next 20 years. This system of compulsory planting was abolished in 1963, in response to a major rebellion by the Africans in 1961. When cotton planting was no longer compulsory, the number of African cotton growers declined; only 41,596 of them planted cotton in 1964, compared with 54,842 in 1960. Nevertheless, cotton production increased rapidly in the years 1964-73 because for the first time an increasing number of commercial farms grew cotton. After 1975, production dropped off when many of these commercial farms were abandoned by their Portuguese owners.

The two principal cotton-producing regions are along the Angolan coast from the M'Bridge River south

to the 12th parallel and in the Baixa de Cassange (Lowlands of Cassange), which lie east of the City of Malange and west of the Cuango River. In 1973, seed cotton production totaled 79,000 tons. Only 645 commercial producers accounted for 62,279 tons from 77,563 hectares. The remaining 17,000 tons came from 26,000 African producers, with about 22,000 hectares planted in cotton (only 0.8 hectare per farm). About 15,000 of these small plantings were located in the Baixa de Cassange. Cotton was also grown in the districts of Benguela, Huila, and Mocamedes (2).

Planting in the littoral region is in March, and harvesting in July and August. In most other areas, cotton is planted in January and picked in July and August.

In 1973, there were eight cotton gins in Angola. These were located in Catete, Dondo, Cacuso, Novo Redondo, Porto Amboim, and Benguela, which had one each, and Malange, where there were two. There were four cottonseed crushing mills--one in Malange, two in Luanda, and one in Catumbela.

Palm Products

The oil palm (*Elaeis Guineensis*) is widely distributed throughout northern Angola and Cabinda west of 15° longitude and north of 12° latitude. For high yields, palms require 1,500 millimeters of rain per annum, well distributed throughout the year, and an annual temperature that remains in the 24° to 26°C range. The distribution of rainfall in Angola does not meet these requirements, and, as a result, is not ideal for high palm fruit yields. Sites where the oil palm produces well in Angola either have irrigation during the dry season or medium-high water tables under deep soils to supplement the rainfall. Commercial production of palm oil was 18,000 tons in the early seventies. Over half of this came from 25,483 hectares of plantations along the lower altitudes of the escarpment in Cuanza Sul District. In the late sixties and early seventies, thousands of hybrid seedlings were planted with the aim of an annual production of more than 100,000 tons by 1980.

Thousands of palms in northern Angola--in Cabinda, along the northern Cuango River, in northern Lunda, and in other locations--provided oil only for family consumption.

Sisal

Sisal is a plantation product. This is because yields per hectare are low, and its onfarm processing requires machinery. Production in 1971/72 totaled 79,000 tons from 202,000 hectares. Ninety-six percent of this was produced on 110 plantations in the region around Cubal, which is 75 kilometers southeast of Benguela. These plantations are located at elevations of 850-1,100 meters, where average precipitation ranges from 750 to 1,000 millimeters. They experience great variations from year to year and place to place, however.

Yields in the Cubal region were 600 to 800 kilograms per hectare. Cost of production depends on the availability of water power. In the middle sixties, costs averaged \$135 per ton using water power, and \$140 with diesel power. Higher petroleum prices have increased processing costs even more. Angolan sisal is of lower quality than that from East Africa.

Corn

Corn is the crop that has the widest distribution in Angola, with every region showing some production. It rivals cassava, Angola's most important staple. Corn (mainly white) was a crop on more than 1 million farms (86 percent of all farms) in 1971/72. Production was estimated at 687,000 tons from 1.8 million hectares. On the other hand, only about a third of the commercial farms reported corn production (90,000 tons from 48,550 hectares). The central plateau near Huambo, especially along the Benguela Railroad as far as Bie, accounted for over 50 percent of the traditional, and 27 percent of commercial production. Another important corn region was the land along the Mocamedes Railroad, from Lubango west to Cubango River, where much of the production was from traditional slash and

burn plantings. Yields averaged only 350-400 kilograms per hectare (about 6 bushels per acre). Here, corn was the most important cash crop for the African farmers. But 13,000 hectares of commercial corn in the same region produced 20,000 tons (a yield of about 25 bushels per acre). At these yields, the commercial farms barely paid the costs of the inputs, while corn production on the small traditional farms, at much lower yields, was feasible because the only inputs--land and labor--had extremely low opportunity costs and almost no cash costs. The country stores' custom of paying higher than market prices for small quantities of corn, taken in trade for merchandise with a high profit margin, encouraged the traditional farmer to produce even at these low yields. On the other hand, the commercial farmer could not compete on the export market with yields of less than 25 bushels per acre. Almost all demand on the Angolan market is for white corn.

Thousands of producers sold small quantities of corn to country stores, traders, and truckers, who in turn sold to the Gremio de Comerciantes e Exportadores de Milho, a type of marketing board. In 1974, the Gremio's storage capacity totaled 113,930 tons, of which 37,620 tons were in bulk elevators, and 76,310 tons were for bag storage (90.8 kilos net weight of corn per bag). All these storage facilities were located at ports or along the three railroads in the center and south. Since the Benguela Railroad crosses the principal corn-producing region in Angola, a major part of the corn storage was along its tracks. Lobito, the terminal of the Benguela Railroad, had a 22,000-ton elevator with a grain dryer and cleaner and a conveyor belt for loading ships. Corn from Mocamedes was hauled by truck to Lobito for export because of the lack of ship-loading machinery at Mocamedes. Table 8 lists the storage places (17).

Cassava (Manioc)

Production of cassava (928,000 tons in 1971/72) exceeded that of corn. Cassava is the most important food crop in those regions where it thrives, but rainfall in the southern third of Angola is not generally

sufficient for growing cassava. The major cassava-producing region, the central plateau around Huambo, accounted for 26 percent of production in 1971/72. Ranking second, with 12 percent of production, was the Dalatando-Malange region. Cassava is also a significant crop over most of the north and northeast. Average production of cassava flour was 1,243 kilos per hectare.

Beans (Phaseolus vulgaris and Vigna sinensis)

Bean production is concentrated on the central plateau, usually interplanted with other crops, such as corn and cassava. Average bean production was 230 kilograms per hectare in 1971/72, with 95 percent of the crop produced on the traditional farms. A second center of production is in the Dalatando-Malange region.

Sweetpotatoes

These are a food crop in the same zones as cassava.

Potatoes

Potatoes are mainly a product of the Huambo Plateau, where most plantings are made in the dry (cool) season, beginning in the nacas (wet lowlands) in July and August, and continuing higher on the slopes as the season advances. About 40,000 hectares were planted in 1971/72, 33,000 by the traditional farmers, but yields were so much higher on the commercial farms that they accounted for over a third of production. Near Huambo, potatoes brought returns of up to \$400 per hectare; this was much higher than the returns from corn.

Bananas and Plantains

Commercial banana production exists in three regions: on large plantations near Luanda, along the valleys of Loge, Lifune, Dande, and Bengo rivers; along the Cuanza River; and in the Lobito-Benguela

region along the Cavaco Valley, where most producers are small. Bananas and plantains are grown by the traditional sector over most of northern and western Angola, but no data are available on this type of production. Commercial production was estimated at 99,000 tons from 7,719 hectares in 1971/72.

Rice

Rice production by small farmers, utilizing only hand labor, was mainly in the river bottoms of the upper Cuanza and its tributaries and in northeastern Lunda. Average yields from this type of production were only about 1,000 kilograms per hectare in 1971/72 (26,000 tons from 26,000 hectares). Average planting per farm was half a hectare. Commercial rice production (24,000 tons on 15,000 hectares) was restricted to 289 farms, most of them on the central plateau.

Millet (Pennisetum Species)

Millet, called Massango, is the basic food crop in the dry regions of southern Angola. This is eaten as porridge, or made into beer. Its production was estimated at 27,000 tons in 1971/72.

Sorghum

This crop, called Massambala, is grown in the dry regions of southern Angola, mainly as an ingredient for homemade beer. Estimated production in 1971/72 was 39,000 tons from 133,000 hectares.

Peanuts

Peanuts are grown by African farmers in most areas except in the dry regions of the south. Greatest production in 1971/72 was in the Malange region. Estimated production for Angola was 26,000 tons from 52,000 hectares.

Sugarcane and Sugar

More than 98 percent of Angola's sugarcane in 1971/72 was grown on the coast. Three plantations in the Luanda region produced 384,000 tons, and two near Lobito-Benguela produced 491,000 tons. Combined, they had 12,237 hectares in sugarcane, mostly under irrigation. A much smaller sugarcane area was located near Malange. The littoral peneplain is best suited for expansion of sugarcane production.

Sunflower Seed

Production was 21,000 tons in 1971/72, mainly from commercial farms in the Malange-Baixa de Cassange region. Average yield was 550 kilograms per hectare.

Citrus Fruit

Commercial production of 16,000 tons in 1971/72 was concentrated on the central plateau, with the Luanda littoral and the highlands of Huila as minor producers.

Pineapple

Production was estimated at 35,000 tons in 1971/72, more than 80 percent from the plateau region near Quibala.

Cocoa Beans

Production was 331 tons, virtually all in Cabinda.

Tobacco

Tobacco was introduced into Angola from Brazil over 400 years ago. Production of dark air-cured tobacco for home consumption has been widespread among the black Africans of Angola for many years. Commercial production of lighter tobaccos increased rapidly in the fifties and sixties. By the early seventies, tobacco for manufacturing was produced on 239 farms in

just four areas: along the river valleys near Quilongues (northwest of Lubango); in a colonato near Matala; at Capelongo, on the Mocamedes Railroad west of Lubango; and in the region near Malange. Production was 6,900 tons, largely flue-cured, in 1974.

Other Crops

Other crops produced in Angola, but only in small quantities, include wheat, sesame seed, and castor beans.

Livestock Production

Originally, cattle raising was restricted to southern Angola because of the prevalence of the tsetse fly in the north and the low level of minerals, such as calcium and phosphorus, in the northern soils. Most of the cattle in the south were owned by Africans who accumulated the animals for prestige and rarely sold or slaughtered them. Large numbers of mature bulls were kept, with no attempt at culling; this did not result in efficient meat production. In the late sixties and early seventies, the promotion of cattle raising by the Government of Angola resulted in an increase in beef production from 17,881 tons in 1970 to 25,500 tons in 1974 (average carcass weight 150 kilograms). Some work was done with the traditional sector--especially cattle dipping and vaccination--but the main effort was in development of commercial ranches, where the quality of the animals was improved by crossing with foreign breeds. In 1970, there were said to be 250 such ranches.

The Livestock Development Fund was established in 1969 to offer credit and technical and veterinarian assistance to cattle producers. The Fund acted as residual buyer of all cattle offered for sale at markets and fairs throughout the country, purchasing at minimum guaranteed prices.

In 1975, there were about 4.5 million cattle in Angola. Of these, only 1.2 million were ranch cattle;

the rest were cattle kept under traditional African nomadic and communal management.

Pigs, estimated at 1.2 million in 1974, were largely concentrated on the central plateau and owned by Africans; 7,500 tons of pork were produced in 1974. There was also swine raising around Luanda and Lobito to supply those urban markets.

Of the 450,000 sheep in Angola in 1974, about half were kept on commercial farms in all regions, even in the coffee zones, but the heaviest concentration was on the central plateau. The African-owned sheep showed a similar distribution, but with a wider range.

The 2 million goats in Angola were widely distributed; about 25 percent were on the central plateau. Less than 10 percent were on commercial farms.

Commercial poultry raising was centered near Luanda and Malange. In other areas, backyard flocks accounted for virtually all production of eggs and meat.

Two dairy-processing plants, one at the Cela Colonato and the other in Huambo, accounted for a large part of the commercial milk, butter, and cheese production.

FARM TECHNOLOGY

There were about 9,500 tractors in Angola at the end of 1973. About half of these were farm tractors; the others were used in construction and road work. In 1973, 844 tractors were imported.

Many of the commercial farms were mechanized. For example, a 65-hectare dairy farm in the Cela Colonato in 1972 had two tractors, one hammer mill, one disc plow, one harrow, one mower, and one wagon. There were also 30 or more machinery pools in the various regions of Angola doing land clearing, land preparation, land leveling, soil erosion control,

construction of small earth dams, drainage, and other land development work.

Human labor was the sole work force on about 86 percent of the small traditional farms in Angola in 1971/72. Use of the ox-drawn plow was widespread on the small farms on the central plateau, but virtually no animal power was used in the entire area north of the Cuanza River or in the eastern areas. Almost none of the traditional farms used tractor power.

Fertilizer consumption in 1973/74 consisted of 8,100 tons of P_2O_5 , 12,300 tons of nitrogenous fertilizers, and 7,800 tons of K_2O . Deposits of phosphorite near Ambrizete could, if finely ground, be used as phosphate fertilizer.

POLICY

Land Settlement

One of the principal aims of Portuguese policy in Angola during the 20th century was to consolidate Portuguese sovereignty and assimilate the Africans into a multi-racial Portuguese-speaking society. This the Portuguese had not achieved during the first 400 years of their presence in Angola. They had not achieved it because, during that period the Portuguese population was concentrated in the coastal towns of Luanda, Mocamedes, and Benguela. Only some soldiers and scattered traders and missionaries lived among the Africans in the interior. Of the 35,000 Portuguese who settled in Angola between 1900 and 1950, most remained in urban areas. By 1950, only 3,000 whites were farming in Angola. This was not because of a lack of potential immigrants, because about 1 million Portuguese emigrated to Brazil, Argentina, and the United States during the same period. Angola, however, was mainly a place for exiled criminals.

The Portuguese dream was to settle thousands of whites among the rural Africans and through colonization they hoped to introduce European culture and European farming methods. To direct the migration

into the rural areas, the Government decided in the early fifties to create two large farm settlements called colonatos; one, at Cela on the central plateau, was planned to accommodate 8,400 families. Each family received 20 hectares and a house, seeds, animals, farm implements, and a monthly subsidy of \$50 or more, until income from the farm was enough to sustain them. These were financed by long-term, low-interest loans, except for the animals, which were to be paid back in kind from the natural increase. The other colonato at Matala (Capelongo) provided for the settlement of 1,000 families in the Cunene River Valley. Farm size at Matala ranged from 5 to 10 hectares. Cela and Matala were the largest colonatos; there were also a number of smaller ones in other locations. Altogether, there were 54 in the late sixties.

Although \$35 million had been spent on Cela by 1960, only 300 families were living there. This was because of the large turnover of colonists; about half of those who had settled did not stay. Qualified people did not want to settle in Angola; only those with few other choices open to them were willing to confront the uncertainties of life on a small farm in Angola. Most of the colonists were illiterate, and many had never farmed before. Between 1950 and 1968, about \$100 million was spent on rural settlements in Angola, but only 840 European families were successfully settled. Cela accounted for a major part of dairy production in Angola, but except for this the colonatos did not make a significant contribution to agricultural production.

To make way for the colonatos, thousands of Africans were moved from their traditional lands. In Cela, 300,000 hectares were involved, and 420,000 in Matala. This created resentment, especially since only a small number of Africans were given farms in the settlements. The colonists were prohibited from hiring African labor because the Government wanted the farms to remain family farms but, as a result, many of the hoped-for cross-cultural contacts between European and African farmers--one of the aims of the assimilation policy--did not take place (7).

Beginning in 1967, the Portuguese Army settled thousands of widely dispersed Africans in guarded villages called aldeamentos so that the insurgents could not contact the villagers. Some of these had agricultural extension programs that substantially increased yields of food crops, but in others the people had to be fed by the Army because they were too far away from their plots to plant crops.

Marketing

Originally, the Government exercised a high degree of control over the production and marketing of agricultural commodities, but in the 1960's, the commodity marketing boards (called juntas or gremios) were modified into "institutes" which only supervised and licensed private trade, and provided extension services to producers.

In the early seventies, there were about 2,000 commercial centers where there was at least one store. Many of these centers were also sites of rural markets, where the people of the area came together 1 day per week (in the larger places more than once) to buy and sell. These markets were generally held in the open air, with buyers and sellers both farmers and professional traders. Table 7 lists the average prices for the principal products sold on these markets from 1964 through 1972.

The Angola Coffee Institute, a semiofficial organization, controlled the production and marketing of coffee. It owned warehouses for storage of coffee and set minimum prices each year; above this minimum, the prices were determined by free market supply and demand.

TRADE

Exports were valued at \$766 million in 1973 and may have exceeded \$1 billion in 1974. The leading export in 1973 was petroleum, valued at \$230 million; followed by coffee (\$206 million); diamonds (\$77

million); iron ore (\$48 million); fishmeal (\$30 million); cotton (\$25 million); sisal (\$19 million); bananas (\$13 million); wood (\$11 million); and corn (\$9.4 million). Portugal, for years the leading market for Angolan exports, was pushed into second place by the United States in 1973 because of U.S. purchases of 39 percent of the petroleum and 55 percent of the coffee. Canada, Japan, and Portugal were other important markets for Angolan petroleum. Angolan coffee was also marketed in Spain, Portugal, and Holland, and distributed to many other markets in smaller amounts. Trade records show that Angolan diamonds were exported exclusively to Portugal, but in reality they were sold on the London market. Iron ore went mainly to Japan, Germany, and the United Kingdom. Fishmeal was exported to Germany, Japan, and Portugal. Cotton was wholly directed to Portugal, because until 1972 there was a 12 percent surtax on all cotton exported to countries other than Portugal. Important sisal customers were Portugal, Belgium-Luxembourg, and Spain. Almost all the bananas went to Portugal, as was the case of logs and sawn timber. Destinations for corn were Portugal and the Cape Verde Islands.

Agricultural exports totaled \$299 million in 1973. These are shown in table 3.

Imports were valued at \$531 million in 1973 and exceeded this figure in 1974. Portugal accounted for 26 percent, followed in turn by West Germany (13 percent), the United States (9.5 percent), and the United Kingdom (7.7 percent).

Agricultural imports were worth \$52 million; with wine (\$16.5 million) and wheat and wheat flour (\$14.3 million) leading the list. Dairy products, olive oil, malt, margarine, and jute accounted for a major part of the balance. For years, Angola was a market for Portuguese bulk wines. In the early 1960's, the quantity imported annually averaged 71,000 tons. By 1973, this quantity decreased to 40,000 tons; nevertheless, total value of the wine increased. Both wine and olive oil imports declined precipitously when Angola became independent; 1976 wine imports dropped below \$1 million. Agricultural imports are summarized in table 4.

U.S. TRADE

U.S. imports from Angola were valued at \$264 million in 1976; petroleum and petroleum products accounted for \$197 million. Agricultural imports totaled \$65.7 million, all for coffee. Table 6 summarizes U.S. imports from Angola.

U.S. exports to Angola in 1976 were valued at \$35 million; machinery and transport equipment accounted for \$25 million. Agricultural commodities exported to Angola were valued at \$8.6 million. Principal items were unmilled wheat (\$8.0 million), tobacco (\$286,000), and flavoring syrups (\$129,000). Table 5 lists U.S. exports to Angola.

Table 1--Agricultural production in Angola by commodity, value and indices of total agricultural and food production, average 1961-65, annual 1966-76

Commodity	Price : Average : 1966		1967		1968		1969		1970		1971		1972		1973		1974		1975		1976		
	weight	1961-65	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
			1,000 metric tons																				
			Dollars																				
Wheat.....	76	19	22	27	27	14	12	23	13	15	12	10	10										
Rice, paddy.....	92	27	30	33	33	16	39	58	50	29	28	20	25										
Corn.....	49	360	340	380	400	540	456	404	400	430	600	450	450										
Millet.....	40	68	70	75	77	78	78	42	27	78	80	25	25										
Beans, dry.....	100	59	64	64	64	64	75	65	60	72	72	50	50										
Potatoes.....	35	23	30	31	32	34	34	35	32	36	30	20	20										
Cassava.....	25	1,309	1,500	1,525	1,545	1,590	1,600	1,134	928	1,200	1,100	900	900										
Sweetpotatoes.....	28	121	125	145	140	145	147	150	130	145	130	110	110										
Tobacco.....	435	4	7	6	9	5	4	4	5	6	7	4	3										
Cotton.....	420	5	7	15	15	20	29	29	34	38	11	16	16										
Cottonseed.....	42	14	22	30	30	40	53	51	30	53	63	31	36										
Peanuts, in shell.....	101	30	32	32	32	32	18	27	26	25	20	15	15										
Castor beans.....	65	5	5	5	5	5	5	3	5	6	5	3	3										
Citrus fruit.....	106	71	75	78	80	81	82	80	80	80	80	30	40										
Plantains.....	60	195	210	213	213	220	225	230	230	240	230	200	200										
Coffee.....	507	176	198	204	186	198	198	204	225	204	186	66	78										
Sisal.....	225	67	67	59	61	65	68	46	68	60	70	40	20										
Sugar, raw.....	80	66	68	67	68	66	79	76	84	82	80	50	40										
Palm oil.....	163	38	35	38	38	38	38	38	38	40	40	35	25										
Palm kernels.....	50	16	17	20	26	14	14	13	13	12	12	10	5										
Meats.....	316	55	55	53	52	54	54	58	64	65	55	50	40										
Milk.....	100	122	125	127	130	133	134	136	130	135	125	100	70										
Aggregates of production.....																							
			Million dollars at constant prices																				
Crops.....	210.8	230.6	237.6	233.3	248.0	251.9	239.4	239.5	242.7	246.5	139.4	133.5											
Livestock.....	28.6	29.9	29.4	29.4	30.4	30.5	31.9	33.2	34.0	29.9	25.8	19.6											
Total agriculture.....	239.4	260.5	267.0	262.7	278.4	282.4	271.3	272.7	276.7	276.4	165.3	153.1											
Total food.....	130.8	138.8	143.6	145.9	153.0	152.6	140.9	133.2	145.9	147.0	113.2	103.9											
Indices of production.....			(1961-65 = 100)																				
Crops.....	100	109	113	111	118	119	114	114	115	117	66	63											
Total agriculture.....	100	109	112	110	116	118	113	114	116	115	69	64											
Total food.....	100	106	110	112	117	117	108	102	112	112	87	79											
Per capita agriculture.....	100	104	105	101	105	104	100	99	99	97	57	52											
Per capita food.....	100	101	103	103	106	104	95	88	95	95	72	65											
Index of population (1961-65 population = 5.036 million).....	100.0	105.0	106.5	108.2	109.9	111.8	113.4	115.1	117.0	118.8	120.8	122.7											

Table 2--Planting and harvesting dates for major crops in Angola, and principal districts where produced

Crop	Planting season	Harvesting season	Principal districts
Wheat	February-May	June-September	Huambo, Bie, Huila, Benguela
Rice	October-December	March-May	Uige, Zaire, Malange, Bie, Lunda, Cuanza-Norte, Cuanza-Sul, Huila, Moxico
Corn	October-November January-February	March-May June-August	Malange, Benguela, Cuanza-Norte Cuanza-Sul, Bie, Luanda, Huila, Moxico
Millet	October-November	March-May	Huila, Mocamedes
Sorghum	February-March	June-July	Cuando-Cubango, Cunene
Beans, dry	February October-November	May-June January-February	Luanda, Cuanza-Norte Huambo, Malange, Uige, Benguela, Huila, Bie, Mocamedes, Cuanza-Sul
Potatoes	August-May	January-May August-October	Malange, Huambo Bie, Huila, Cuanza-Sul, Benguela, Mocamedes, Luanda
Cassava	October-November	All year	Cabinda, Zaire, Uige, Malange, Luanda, Moxico, Cuanza-Sul, Huambo, Bie
Tobacco	December-March	January-February August-September	Malange Benguela, Huila
Cotton	December-January January-February March-April	June-August July-October August-November	Benguela Huila Malange, Cuanza-Norte, Cuanza-Sul, Littoral of Zaire, Luanda and Cuanza-Sul
Peanuts	February-March October & December	May-June February-March	Zaire Uige, Malange, Lunda, Moxico
Castor beans	October-November	January-June	Cuanza-Sul, Huambo, Benguela, Bie, Huila
Citrus fruit	All year	March-August	Zaire, Luanda, Cuanza-Sul, Benguela, Bie, Huila, Huambo

Continued

Table 2--Planting and harvesting dates for major crops in Angola, and principal districts where produced--Continued

Crop	Planting season	Harvesting season	Principal districts
Bananas & plantains	All year	All year	Luanda, Cuanza-Norte, Benguela
Coffee	October-April	June-September	Zaire, Uige, Cuanza-Norte, Cuanza-Sul, Cabinda
Sisal	April-November	All year	Cuanza-Norte, Cuanza-Sul, Benguela
Sugarcane	October	August-December	Luanda, Malange, Benguela
Oil palms	All year	April-May October-December	Luanda, Zaire, Cabinda Cuanza-Norte, Cuanza-Sul, Uige, Benguela, Lunda
Sesame seed	October-November	June	Zaire, Benguela, Luanda, Cuanza-Sul
Sunflower seed	October-November March-April	March-April July and October	Malange Cuanza-Norte, Benguela, Luanda, Cuanza-Sul
Cashew	October-January	November-January	Zaire, Lunda

Source: (3).

Table 3--Exports of principal agricultural commodities, Angola, average, 1963-65, and annual, 1970-75

Commodity	1963-65 average <u>1/</u>	1970 <u>2/</u>	1971 <u>3/</u>	1972 <u>4/</u>	1973 <u>5/</u>	1974 <u>6/</u>	1975 <u>6/</u>
	<u>1,000 tons</u>						
Meat and preparations.....	2	2	2	3	2	1/	--
Corn, unmilled.....	123	180	97	77	120	65	2
Bananas.....	4	36	49	60	77	66	35
Beans.....	10	12	15	17	29	14	8
Cassava.....	37	25	15	8	2	--	--
Sugar and molasses.....	39	25	23	27	10	6	--
Coffee.....	145	181	181	177	219	218	163
Tobacco.....	2	2	2	2	7	4	2
Peanuts.....	3	2	7/	--	--	7	--
Palm kernels.....	16	12	7	6	8	--	--
Cotton seed.....	1	24	26	5	--	6	3
Castor seed.....	1	4	2	2	1	1	1
Sisal.....	57	66	63	65	58	67	45
Cotton fiber.....	4	24	35	15	23	14	8
Palm oil.....	17	11	11	8	3	4	3
Palm kernel oil.....	2	7/	1	7/	7/	2	7/
	<u>1,000 dollars</u>						
Meat and preparations.....	792	1,356	1,572	1,840	1,599	4	--
Corn, unmilled.....	6,861	11,614	5,202	5,287	9,999	7,445	210
Bananas.....	2,111	4,153	6,292	9,781	12,525	11,439	7,500
Beans.....	1,019	1,497	2,816	2,829	4,838	4,771	3,100
Cassava.....	2,132	1,724	1,029	590	200	--	--
Sugar and molasses.....	2,996	1,681	1,415	1,845	1,583	1,009	--
Coffee.....	85,792	136,144	145,541	142,035	206,481	247,360	170,000
Tobacco.....	1,054	1,445	1,755	1,934	9,339	7,718	4,000
Peanuts.....	462	285	84	--	--	70	--
Palm kernels.....	2,163	1,629	958	514	1,073	--	--
Cotton seed.....	50	1,285	1,548	316	--	593	330
Castor seed.....	140	424	236	307	172	371	400
Sisal.....	15,336	8,338	7,985	12,298	18,717	50,157	30,000
Cotton fiber.....	1,509	14,797	23,413	10,526	24,784	19,660	8,000
Palm oil.....	2,824	2,193	2,305	1,653	628	1,736	730
Palm kernel oil.....	427	137	290	31	204	1,156	250
Other agricultural.....	2,972	9,509	10,083	3,886	6,728	--	--
Total agricultural ex- ports.....	128,640	198,211	213,434	195,672	298,870	--	--
Agricultural exports to U.S.....	44,694	64,699	83,564	64,989	8/103,558	8/166,183	8/76,600
Total exports.....	187,518	426,598	437,732	515,389	766,325	--	--

-- = Not reported or not applicable.

1/ \$1 = 28.95 Escudos. 2/ \$1 = 28.50 Escudos. 3/ \$1 = 27.70 Escudos. 4/ \$1 = 27.00 Escudos.
5/ \$1 = 25.00 Escudos. 6/ FAO Trade Yearbook. 7/ Less than 1,000 tons. 8/ U.S. trade data.

Note: Tons are metric.

Source: "Boletim Mensal de Estatística," Instituto Nacional de Estatística Delegação de Angola, Luanda.

Table 4--Imports of principal agricultural commodities, Angola, average, 1963-65, and annual, 1970-75

Commodity	1963-65 average <u>1/</u>	1970 <u>2/</u>	1971 <u>3/</u>	1972 <u>4/</u>	1973 <u>5/</u>	1974 <u>6/</u>	1975 <u>6/</u>
	<u>1,000 tons</u>						
Dairy products and eggs...	9	4	4	3	4	4	3
Wheat.....	32	82	74	79	104	116	116
Wheat flour.....	9	3	3	3	5	8	1
Malt.....	4	10	12	16	13	18	19
Wine.....	71	69	51	40	40	42	20
Olive oil.....	3	5	6	3	3	2	1
Margarine.....	1	2	2	1	1	--	--
Jute.....	5	--	2	<u>7/</u>	4	5	5
	<u>1,000 dollars</u>						
Dairy products and eggs...	2,931	3,668	4,045	3,596	4,939	4,964	3,193
Wheat.....	2,380	5,926	5,784	5,267	12,380	23,795	22,000
Wheat flour.....	992	366	435	429	1,966	1,132	230
Malt.....	678	1,550	2,507	3,325	3,005	5,237	6,000
Wine.....	12,215	17,820	12,598	10,805	16,474	18,204	8,000
Olive oil.....	2,363	4,099	5,833	2,727	2,876	3,948	1,600
Margarine.....	482	1,399	1,396	1,188	1,145	--	--
Jute.....	1,034	--	417	28	966	1,330	1,300
Other agricultural.....	10,203	3,639	4,179	2,962	7,889	--	--
Total agricultural im- ports.....	33,278	38,467	37,194	30,327	51,740	--	--
Agricultural imports from U.S.....	2,130	6,637	4,031	2,710	2,952	<u>8/3,106</u>	<u>8/10,124</u>
Total imports.....	167,140	371,740	437,824	395,872	530,755	--	--

-- = Not reported or not applicable.

1/ \$1 = 28.95 Escudos.

2/ \$1 = 28.50 Escudos.

3/ \$1 = 27.70 Escudos.

4/ \$1 = 27.00 Escudos.

5/ \$1 = 25.00 Escudos.

6/ FAO Trade Yearbook.

7/ Less than 1,000 tons.

8/ U.S. trade data.

Note: Tons are metric.

Source: "Boletim Mensal de Estatística," Instituto Nacional de Estatística Delegação de Angola, Luanda.

Table 5--U.S. agricultural exports to Angola, quantity and value by commodity, selected years, 1965-1971/76

Commodity	1965	1971	1972	1973	1974	1975	1976
	<u>Metric tons</u>						
Animals and meats.....	--	6	1/	1/	5	6	29
Dairy products and eggs.....	--	50	53	70	23	8	4
Wheat.....	8,791	28,222	14,587	--	--	13,227	56,118
Wheat flour.....	2,591	--	--	1/	637	--	--
Rice (milled).....	2,215	361	244	3,175	697	280	--
Corn (unmilled).....	--	--	--	--	--	54,345	--
Fruit and vegetables.....	--	--	--	18	7	--	7
Flavoring syrups.....	252	35	1/	2	2	57	--
Sugar and preparations.....	--	1/	10	15	16	2,369	3
Animal feed.....	--	--	--	--	--	--	--
Miscellaneous food preparations...	--	--	--	--	--	--	14
Animal and vegetable material.....	--	8	58	9	277	1/	--
Tobacco (unmanufactured).....	274	599	501	49	478	--	75
	<u>1,000 dollars</u>						
Animals and meats.....	--	99	111	86	105	215	101
Dairy products and eggs.....	--	78	73	170	88	27	27
Wheat.....	517	1,717	927	--	--	1,747	8,014
Wheat flour.....	258	--	--	1	195	--	--
Rice (milled).....	340	77	35	1,706	409	148	--
Corn (unmilled).....	--	--	--	--	--	5,843	--
Fruit and vegetables.....	--	--	97	23	16	--	3
Flavoring syrups.....	212	156	1	6	28	0	129
Sugar and preparations.....	--	1	30	68	77	1,539	14
Animal feed.....	--	12	17	42	48	13	--
Miscellaneous food preparations...	--	474	425	681	681	345	20
Animal and vegetable material.....	--	56	132	36	323	14	--
Tobacco (unmanufactured).....	476	1,333	993	121	1,123	--	286
Other agricultural.....	117	28	60	12	13	233	8
Total agricultural exports.....	1,920	4,031	2,710	2,952	3,106	10,124	8,602
Total exports.....	13,320	35,666	25,932	38,002	61,741	52,871	34,857

-- = Not reported or not applicable.

1/ Less than one ton.

Source: U.S. Foreign Agricultural Trade Statistical Report, Calendar Years 1965-76, Economic Research Service, U.S. Department of Agriculture.

Table 6--U.S. agricultural imports from Angola, quantity and value by commodity, selected years, 1965-1971/76

Commodity	1965	1971	1972	1973	1974	1975	1976
	<u>Metric tons</u>						
Coffee and coffee							
extracts.....	7,687	95,213	78,009	103,075	144,058	72,278	52,458
Sisal.....	172	250	--	151	--	395	--
Beeswax.....	326	190	189	166	122	50	--
	<u>1,000 dollars</u>						
Coffee and coffee							
extracts.....	45,866	80,969	69,136	103,372	165,646	76,052	65,710
Sisal.....	22	42	--	27	--	393	--
Beeswax.....	328	272	257	273	335	133	--
Other agricultural....	42	136	158	345	151	22	--
Total agricultural imports.....	46,236	81,377	69,551	103,717	166,183	76,600	65,710
Total imports.....	48,720	89,234	89,565	166,316	378,169	424,600	264,259

-- = Not reported or not applicable.

Source: U.S. Foreign Agricultural Trade Statistical Report, Calendar Years 1965-76, Economic Research Service, U.S. Department of Agriculture.

Table 7--Average prices of products sold at rural markets in Angola, 1964-72

Product	1964 1/	1965 1/	1966 1/	1967 1/	1968 2/	1969 3/	1970 3/	1971 4/	1972 5/
	Angolan Escudos per kilogram								
Seed cotton.....	3.51	3.85	3.90	4.26	4.73	4.79	5.01	5.29	5.46
Coffee beans (in shell).....	4.40	4.81	4.98	4.77	4.98	4.36	5.23	3.76	4.72
Coffee beans (processed).....	9.63	8.69	10.04	10.41	10.20	9.61	10.85	8.70	10.33
Corn.....	.79	.79	.88	.89	1.02	1.18	1.25	1.46	1.29
Rice (paddy).....	1.59	1.61	1.74	1.74	1.77	2.14	2.11	2.05	2.14
Cassava flour (heat dried).....	1.50	1.65	1.37	3.07	3.67	1.20	1.05	1.50	2.45
Cassava chips (dry).....	.63	.64	.66	.70	.65	.64	.68	.73	1.02
Cassava (fermented) Bombo.....	.73	.72	--	.76	.54	1.16	.62	.68	1.11
Peanuts (shelled).....	2.39	2.77	2.79	2.80	2.89	2.89	3.04	3.85	4.57
Beans (dry).....	2.46	2.29	2.79	1.95	2.09	2.04	2.46	3.89	2.66
Sweetpotatoes.....	.50	.88	.81	.70	.80	.80	.82	1.50	.87
Potatoes.....	1.85	1.79	1.90	1.39	1.65	1.87	2.00	2.19	1.19
Palm oil.....	5.00	2.04	2.94	3.29	3.21	3.04	2.96	3.14	5.00
Palm kernels.....	1.43	2.29	1.90	1.69	2.36	2.21	2.07	2.07	2.00
Sesame seed.....	3.15	3.04	3.16	3.30	3.38	2.94	3.94	2.81	3.31
Castor seed.....	1.89	1.60	1.68	2.00	2.58	2.45	1.49	--	--
Wheat.....	2.14	2.02	2.13	2.29	2.12	2.22	2.20	2.20	--
Squash seed (Pevide).....	1.36	1.63	2.24	2.21	2.21	2.31	2.29	2.08	2.47
Garlic.....	3.78	2.39	6.61	7.32	10.33	10.00	10.00	10.00	10.00
Punga fiber.....	4.21	4.26	4.36	4.40	4.42	4.40	4.41	4.45	4.52
Urena lobata.....	4.65	4.79	4.75	4.95	4.95	5.00	5.16	5.19	5.15
Tobacco.....	6.58	6.79	5.65	5.12	5.92	--	4.99	--	6.60
Cashew nuts.....	--	1.19	1.40	1.59	1.89	2.00	2.10	2.10	2.10
Chickens.....	13.53	13.63	11.86	11.53	10.87	12.29	13.50	13.42	14.54
Cattle.....	8.80	12.90	6.75	5.52	5.72	5.57	4.25	5.33	6.46
Goats.....	6.74	7.69	3.46	3.85	4.71	4.43	4.43	5.08	5.47
Sheep.....	4.68	9.94	4.83	3.48	5.88	4.44	4.37	4.25	5.00
Swine.....	2.52	2.71	6.08	5.60	5.97	7.01	7.70	7.44	7.86

-- = Not reported.

1/ \$1 = 28.95 Escudos. 2/ \$1 = 28.75 Escudos. 3/ \$1 = 28.50 Escudos. 4/ \$1 = 27.70 Escudos. 5/ \$1 = 27.00 Escudos.

Note: Above exchange rates were the official rates. The free market rate was about 35 Escudos to the dollar.

Source: Angola: Boletim Mensal de Estatística, 1964-1972.

Table 8--Corn storage in Angola, 1974

Place	Capacity	Place	Capacity
	Metric tons		Metric tons
<u>Served by Benguela Railroad</u>			
Lobito.....	<u>1</u> /32,700	: Bela Vista.....	2,343
Quenjenje.....	154	: Chinguar.....	2,343
Cuma.....	864	: Cutato.....	82
Longonjo.....	<u>1</u> /4,757	: Vouga.....	2,343
Caala.....	<u>1</u> /9,091	: Bie.....	227
Huambo.....	<u>1</u> /7,132	: Chipeta.....	817
Mariano Machado.....	<u>2</u> /2,270	: Nova Sintra.....	2,061
Vila Nova.....	<u>1</u> /3,286	: Camacupa.....	<u>1</u> /2,250
<u>Served by Mocamedes-Menongue Railroad</u>			
Mocamedes.....	11,078	: Matala.....	7,627
Lubango.....	4,086	: Dongo.....	1,362
Quipungo.....	2,724	: Artur de Paiva.....	27
<u>Served by Luanda-Malange Railroad</u>			
Luanda.....	2,906		
Lombe.....	<u>2</u> /772		
Malange.....	<u>2</u> /3,323		

1/ Has elevator.

2/ Has carbon disulfide disinfectant chamber.

Note: Total storage capacity existing in 1974: 113,930 tons.

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